

REMARKS

1. The Amendments, the Support Therefor, and Basis for Entry

Four claims (17, 18, 39, and 40) are canceled, no new claims have been added, and claims 1, 30, 41, and 42 have been amended to leave claims 1, 8, 9, 15, 20, and 27-38, 41, and 42 in the application. No new matter has been added by the amendments or new claims, wherein:

- Claims 1 and 30 are amended to incorporate features of their dependent claims 39 and 40 (now canceled), as well as features noted at (for example) page 13 lines 10-13.
- Claims 41 and 42 are amended to address the §112 rejections, and find clear support in FIG. 9 (as well as FIG. 8 and page 12 line 1 onward).

2. Amendments to the Specification

Please note that the Preliminary Amendment filed August 25, 2006 included several amendments to the written description of the application. It is unclear whether the Office has entered these amendments. Kindly confirm. This was requested in the last Response as well, but the January 21, 2011 Office Action does not provide any confirmation.

3. Sections 2-3 of the Office Action: Rejection of Claims 41 and 42 under 35 USC §112(1)

Kindly refer to page 12 line 1 onward of the application, as well as FIGS. 8-9. FIG. 9 clearly illustrates a conductive path with multiple electrically conductive paths connected in parallel, with the number of parallel paths being at least an order of magnitude greater than the number of electrically conductive paths defining terminal lengths (lengths A and B) of the conductive path. As noted at page 12 lines 16-17, FIG. 8 incorporates the circuit of FIG. 9: if the circuit of FIG. 8 was “unfolded,” it would appear as FIG. 9 (i.e., the circuit of FIG. 9 is present in the fabric of FIG. 8). FIGS. 8 (and 9) therefore contain §112(1) support for the claimed matter.

4. Sections 4-5 of the Office Action: Rejection of Claims 41 and 42 under 35 USC §112(2)

Kindly reconsider and withdraw these rejections, which are believed to be addressed by the accompanying clarifying amendments to claims 41 and 42, which clarify that the terminal lengths extend from the parallel paths (i.e., the terminal lengths are exclusive of, and do not define, the paths connected as a parallel circuit).

5. Sections 6-7 of the Office Action: Rejection of Claims 1, 8, 9, 17, 18, 20, 28-32, 34, 35, and 37-40 under 35 USC §102 in view of US Publn. 2003/0119391 to *Swallow et al.*

Independent claims 1 and 30 are submitted to be allowable at least owing to their recitation that they lack any crossover points at which conductive elements are spaced apart while being biasable under pressure into conductive relationship, while at the same time having the permanently biased and permanently connected crossovers (as well as the other relationships noted in the claims). Such an arrangement is not shown in, nor would it be obvious in view of, US Publn. 2003/0119391 to *Swallow et al.*. The purpose of *Swallow et al.* is to provide a fabric / circuit whose electrical properties vary with pressure / flexure; see, e.g., the Abstract of *Swallow et al.* (describing “[a] fabric including within its construction a first elongated electrical conductor crossed by a second elongated electrical conductor, the conductors being normally biased apart at a crossover point of said fibres with an air gap between them, whereby application of pressure in a direction substantially normal to a plane of the fabric causes the conductors to make contact”). The *Swallow et al.* fabrics can therefore be used as a sensing element, e.g., as a switch or an array of switches, with the fabric’s electrical properties varying in dependence on the area of the fabric being compressed. See, e.g., par. [0001] (discussing how “[t]he present invention relates to methods of constructing one or more pressure activated electrical switches or sensors in fabric”). It is noted that the Office Action states that *Swallow et al.* shows a fabric that “lacks electrically conductive filaments or fibers which are spaced apart, but biasable into conductive connection, and that the fabric lacks any crossover points at which conductive elements are biased apart, but biasable into conductive communication (Swallow, Figures 10 and 12).” However, this is clearly incorrect: note the drawing key in FIG. 10 of *Swallow et al.*,

showing “pressure actuated switch” crossovers as solid dots, with several of these crossovers being depicted. The same applies to FIG. 12 of *Swallow et al.* In summary, all *Swallow et al.* fabrics contain biasable crossovers: this is the fundamental objective of the fabrics.

In contrast, claims 1 and 30 define fabrics / circuits wherein certain crossing conductors are permanently spaced, or alternatively permanently connected, to achieve desired electrical properties, with the spaced-but-biasable conductor “switches” of *Swallow et al.* being absent. The fabrics / circuits are designed with conductors, insulators, and crossover points such that an area of (practically) any size or shape within the fabric can be constructed with (practically) any desired resistance, even if the yarns, filaments or fibres used to make the fabric have only a limited number/range of yarn conductivities. Owing to the recited permanently biased and permanently connected crossovers, the size and shape of the conductive paths within the fabric can be controlled to fit them within the fabric as desired. The resulting fabric can therefore be constructed with the desired electrical properties, and can be used in components such as heating elements, resistor components, capacitor components, inductive components, resistive transducers, capacitive transducers, inductive transducers, impedance transducers, reactive transducers or resistive temperature transducers.

Since the *Swallow et al.* fabrics always have the spaced-but-biasable conductor “switches” – this is why they are made – and since claims 1 and 30 explicitly exclude these “switches,” claims 1 and 30 are plainly not anticipated by *Swallow et al.*. Moreover, these claims recite matter that is unobvious in view of *Swallow et al.* as well. To paraphrase MPEP 2142,¹ an obviousness determination requires that one place the claimed invention out of mind, review the prior art from the perspective of an ordinary artisan, and determine whether the prior art would lead the ordinary artisan to conceive the invention. Here, if one steps back and truly places the

¹ As stated in MPEP 2142:

To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical “person of ordinary skill in the art” when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention “as a whole” would have been obvious at that time to that person.

claimed invention out of mind, and then looks to *Swallow et al.* and contemplates what an ordinary artisan would be led to develop in view of this reference, it cannot objectively and convincingly be said that *Swallow et al.* would truly lead one to construct the claimed invention without the use of hindsight. *Swallow et al.* is devoted to the provision of a pressure-sensitive fabric – an arrangement which is expressly excluded by the present claims – and no ordinary artisan reviewing *Swallow et al.* would contemplate a fabric which lacks pressure-sensitive connections, and which can yield, for a piece of fabric of given area and shape, a very broad range of resultant resistances. Modifying *Swallow et al.* to generate a circuit / fabric lacking “switchable” conductive connections, and including only permanent conducting and non-conducting connections, would be wholly contrary to the purposes of *Swallow et al.* See MPEP 2143.01, subsection entitled “The Proposed Modification Cannot Change the Principle of Operation of a Reference”. Independent claims 1 and 30, and therefore all claims, are therefore submitted to be allowable.

Regarding **claims 28 and 37**, the Office Action alleges that FIGS. 10-12 of *Swallow et al.* illustrates a spiral conductive path. This is incorrect: regardless of whether the pressure-actuated switches shown in these drawings are closed or open, the conductive paths are not seen to be spiral in shape. Further, it is simply not understood where / how a spiral path is seen in these drawings. If this rejection is maintained, kindly supply sufficient detail that the applicants can understand where the spiral path is allegedly present, as per 37 CFR §1.104(c)(2);² *Ex parte Levy*, 17 USPQ2d 1461, 1462 (Bd. Pat. App. & Int. 1990).³

Regarding **claims 29 and 38**, as with claim 28, the recited matter is not seen in the cited

² “In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. *When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.*” (Emphasis added)

³ “The factual determination of anticipation requires the disclosure in a single reference of every element of the claimed invention. . . . It is incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.” (*citing to Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984)).

drawings or passages, nor is it understood how the recited matter is believed to be present in the cited drawings or passages. If the rejection is maintained, kindly explain.

6. Sections 8-9 of the Office Action: Rejection of Claims 1, 8, 9, 17, 18, 20, 28-32, 34, 35, and 37-40 under 35 USC §103 in view of US Publn. 2003/0119391 to *Swallow et al.*

The §103 rejections of *claims 1 and 30* are addressed in the foregoing Section 5 of this Response.

Regarding the §103 rejection of *claim 28*, this basically alleges that the claimed spiral arrangement is obvious because “it is within the level of ordinary skill” to construct it. However, this is true of every invention. This rejection is unsupported because it does not “identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the way the claimed new invention does,” or otherwise set forth some “apparent reason to combine the known elements in the fashion claimed.” (*Ex parte Whalen*, 89 USPQ2d 1078, 1084 (Bd. Pat. App. & Int. 2008), citing *KSR Int’l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007)). An ordinary artisan may be able to construct the claimed invention once he/she knows of it, but in view of the cited art, why / how would an ordinary artisan conceive the claimed invention in the first place?

Similarly, the rejections of *claims 41 and 42* are predicated on the reasoning that an ordinary artisan *could* construct the recited arrangement, rather than explaining why an ordinary artisan *would* conceive the recited arrangement. When the *Swallow et al.* reference is reviewed for all that it teaches, there is no apparent reason why one would contemplate the claimed arrangement.

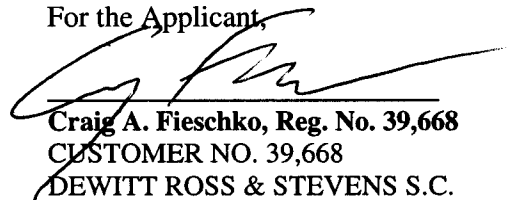
7. Section 8 of the Office Action: Rejection of Claims 15, 18, 20, 33 and 35 under 35 USC §103 in view of US Publn. 2003/0119391 to *Swallow et al.* and US Patent 6,333,736 to *Sandbach*

These claims are submitted to be allowable for at least the same reasons as claims 1 and 30, from which these claims depend.

8. In Closing

If any questions regarding the application arise, please contact the undersigned attorney. Telephone calls related to this application are welcomed and encouraged. The Commissioner is authorized to charge any fees or credit any overpayments relating to this application to deposit account number 18-2055.

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